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EXAMINER
WU, JUNCHUN

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _09 February 2009_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _21,24-29,31-36 and 38_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _21,24-29,31-36 and 38_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This office action is in response to the amendment filed on Feb. 9, 2009.

2.   Claims 21, 24-29, 31-36, and 38 are pending.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 21, 24-29, 31-36 and 38 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Gloudeman et al. (U.S. Patent No. 6,028,998 hereinafter "Gloudeman"), in

view of Azarya et al. (U.S. Patent No. 5,978,578 hereinafter "Azarya").

5.   Per claim 21 and 29

Gloudeman discloses

A storage medium which stores a software system for providing a programming environment to

create device-independent functionality among automation devices in an automation system of

the type including a plurality of automation devices (col.2 lines 20-28 *"The present invention*

provides an application framework that greatly simplifies developing building automation

systems. The framework encapsulates the knowledge and best practices of experienced system

designers, leaving the user free to create an application to solve a given building automation

problem, free from worry about device-dependent details. The application framework is

designed to be consistent across all devices on a building automation network, to ensure that the

devices communicate and operate in a similar fashion."), the system comprising:

- one or more automation engineering editors for generating solutions for one or more of
  the automation devices (col.11 lines 26-28 "*Typically an application is developed using*
  the application framework to generate the application whereupon it is downloaded to the
  system to implement a solution.").

- the software system providing encapsulation of specific functions of at least one of the
  automation devices and providing a base functionality of the one automation devices
  (col.2 lines 62-66 "*The application framework of the invention provides standard object*
  types, discussed more fully below. Instances of the standard object types are created by
  the application development tool and then distributed to devices on the building
  automation system." & col.2 lines 41-48 "*The user creates an application to solve a*
  building automation problem using one or more of these standard components. The
  model upon which the framework is based is an application-centric model. The standard
  components encapsulate, and thereby hide, device-specific details so that the user creates
  applications in terms of the desired system functionality.").

- the editor and compiler providing an automation functionality in a standard framework
  for application among automation devices having different command sets for being
  programmed (col.2 lines 27-32 "*The application framework is designed to be consistent*
  across all devices on a building automation network, to ensure that the devices
  communicate and operate in a similar fashion. The application framework defines a

scalable architecture that will function on a wide range of processor platforms, from a

small controller to a fully equipped operator work station." **&** col.4 lines 22-40 *"The*

command component provides a somewhat related function with respect to certain

methods of the standard object that are available for execution through the user

interface. Commands represent a subset of the available methods defined in an object.

Commands are methods that are visible to outside objects, and to the user interface, so

that they can be executed by another object or from the user interface by sending a

message to the object. The command component encapsulates the logic 60 performed by

these externally visible methods. The commands are also defined in terms of command

parameters 62, parameter properties 63 and command properties 64. Parameter

properties in turn include data types 65. Similar to the attribute properties 52, these

parameter properties 62 and command properties 64 are used to define the available

commands so that they can be flexibly changed in developing different standard objects

in the application framework.")

Gloudeman does not disclose

- an automation device-specific adapter for each of the automation devices, each adapter

  providing a translation of a solution into instructions which can be interpreted by an

  automation device in a different automation system

- a compiler for translating the solutions into an intermediate language in a runtime

  framework for further translation into different instructions for automation devices in

  different automation systems.

But Azarya discloses

- a compiler for translating the solutions into an intermediate language in a runtime

  framework (col.3 lines 16-32 *"The development system includes a real-time compiler for*

  generating p-code to be executed on the target system. The target system, e.g., the node

  controller, runs the real-time kernel ... The real-time compiler generates p-code from the

  combination of event triggers, event actions and program logic making up the user's

  application. Based on the program logic as expressed in the p-code, various actions are

  taken in response to changes in the values of the external input signals and/or entities.

  The real-time kernel functions to implement a state machine that receives inputs and

  generates outputs. The actions taken by the system are represented as a sequence of

  frames with each frame representing a unit of action.") for further translation into

  different instructions for automation devices in different automation systems (col.4 lines

  56-62 *"The action execution unit performs a method comprising the steps of reading the*

  p-code contents of a frame, analyzing the p-code, reading the values of external input

  signals and/or internal entities, and performing the <u>command</u> embodied in the p-code,

  generating any output signals in accordance with the <u>command</u>, and modifying any entity

  values in accordance with the <u>command</u>." & Col.4 lines 63-67 *"In addition, there is*

  provided in accordance with the present invention, in a computer system, a method of

  generating p-code for execution on a node controller as part of a control automation

  system for controlling a plurality of input and output (I/O) devices in accordance with a

  user's application." & Col.5 lines 30-37 *"Further, there is provided in accordance with*

  the present invention a node controller apparatus for use in a control automation system,

  the system for controlling a plurality of input and output (I/O) devices in accordance with

a user's application, the system including a network for communicating control

automation information, the apparatus comprising processor means for managing and

controlling the operation of the node controller")

▪ an automation device-specific adapter for each of the automation devices, each adapter

providing a translation of a solution into instructions which can be interpreted by an

automation device in a different automation system (same rejection also apply to this

element on col.4 lines 56-62; Col.4 lines 63-67 and Col.5 lines 30-37).

▪ Therefore, it would have been obvious to a person of ordinary skill in the art at the time

the invention was made to combine teachings of Gloudeman and further include a

compiler for translating the solutions into an intermediate language in a runtime

framework for further translation into different instructions for automation devices in

different automation systems and each adapter providing a translation of a solution into

instructions which can be interpreted by an automation device in a different automation

system by the teachings of Azarya in order to provide a method for controlling a plurality

of input and output (I/O) devices in accordance with a user's application, performing the

command embodied in the p-code, generating any output signals in accordance with the

command, and modifying any entity values in accordance with the command.

6.   Per claims 24 and 32

the rejection of claim 21 is incorporated

Gloudeman further discloses

- the software system is provided for developing control software in the automation system (col.1 lines 7-11 *"The present invention relates generally to building automation systems. More particularly, the invention relates to a software application development system or framework to facilitate constructing complex building automation applications"*).

7.   Per claims 25 and 33

the rejection of claim 21 is incorporated

Gloudeman further discloses

- the software system provides technological objects for automation devices (col.3 lines 3-6 *"Standard objects are the basic components used to construct assembled objects or applications. Standard objects may also be created and downloaded to devices on the system to serve as independent, standalone entities."*).
- when the system includes m editors and n automation devices, at most, only n+m compilers are required to implement the solution (It combine teachings of Gloudeman and Azarya that will be at least one compiler to implement the solution).

8.   Per claims 26 and 34

the rejection of claim 21 is incorporated

Gloudeman discloses

- a memory for storing automation solutions for recurring tasks (col.2 lines 48-53 *"the standard components of the preferred embodiment are illustrated to show how they are related through nesting. In FIG. 1 the shorthand notation 1-n means that the object can*

have one to many instances, depending on a particular building automation problem

being solved.").

9.   Per claims 27 and 35

the rejection of claim 26 is incorporated

Gloudeman discloses

   ▪   adapted for using the Internet and/or an intranet for transmitting data (col.11 lines 65-67

       "Unlike standard objects and assembly objects, an application's components may be

       distributed across one or more devices over a network.").

10.   Per claims 28 and 36

the rejection of claim 21 is incorporated

Gloudeman discloses

   ▪   an automation- specifically designed programming language is used for developing

       control software for the automation system (col.13 lines 39-42 *"The presently preferred*

       embodiment embeds the application framework in a programming tool that the

       application developer uses in creating applications to solve problems or meet building

       automation customer needs.").

11.   Per claim 31

the rejection of claim 29 is incorporated

Gloudeman discloses

- automation functionality is provided independent of the automation device (col.3 lines 3-6 *"Standard objects are the basic components used to construct assembled objects or applications. Standard objects may also be created and downloaded to devices on the system to serve as independent, standalone entities."*).

Per claim 38

the rejection of claim 36 is incorporated

Gloudeman discloses

- compilers are provided for mapping the programming language onto the target platform (col.6 lines 33-36 *"The present invention also provides a development system comprising a computer compiler for generating real-time code executable on a real-time kernel that resides in a target system."*).

Response to Arguments

Applicant's arguments filed on Sept. 3, 2008 have been fully considered but they are not persuasive.

- In the remarks, Applicant argues that:

(a)   In regard to independent claims 21 and 29, applicant noted that references do not disclose or suggest the feature of providing a functionality among automation devices having command sets. Also, applicant further noted that references do not disclose "a compiler for translating the solutions into an intermediate language in a runtime framework for further translation into different instructions for automation devices in different automation systems"

Examiner's response:

Examiner disagrees.

(a)   Gloudeman implicitly discloses providing an automation functionality in a standard

framework for application among automation devices having different command sets for being

programmed. In col.4 lines 22-40 Gloudeman discloses *"The command component provides a*

somewhat related function with respect to certain methods of the standard object that are

available for execution through the user interface. Commands represent a subset of the

available methods defined in an object. Commands are methods that are visible to outside

objects, and to the user interface, so that they can be executed by another object or from the user

interface by sending a message to the object. The command component encapsulates the logic

60 performed by these externally visible methods. The commands are also defined in terms of

command parameters 62, parameter properties 63 and command properties 64. Parameter

properties in turn include data types 65. Similar to the attribute properties 52, these parameter

properties 62 and command properties 64 are used to define the available commands so that

they can be flexibly changed in developing different standard objects in the application

framework." Also, Azarya implicitly discloses "a compiler for translating the solutions into an

intermediate language in a runtime framework described in col.3 lines 16-32 *"The development*

system includes a real-time compiler for generating p-code to be executed on the target

system..." for further translation into different instructions for automation devices in different

automation systems" (described in col.4 lines 56-62 *"The action execution unit performs a*

method comprising the steps of reading the p-code contents of a frame, analyzing the p-code,

reading the values of external input signals and/or internal entities, and performing the

command embodied in the p-code, generating any output signals in accordance with the

command, and modifying any entity values in accordance with the command." & Col.4 lines 63-

67 *"In addition, there is provided in accordance with the present invention, in a computer*

system, a method of generating p-code for execution on a node controller as part of a control

automation system for controlling a plurality of input and output (I/O) devices in accordance

with a user's application." & Col.5 lines 30-37 *"Further, there is provided in accordance with*

the present invention a node controller apparatus for use in a control automation system, the

system for controlling a plurality of input and output (I/O) devices in accordance with a user's

application, the system including a network for communicating control automation information,

the apparatus comprising processor means for managing and controlling the operation of the

node controller"). This method is to provide an automated control system that enables a

controller to execute a plurality of I/O devices operations that originated in controller attached to

other automation systems on the network (refer to Fig.3)

Conclusion

12.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to JUNCHUN WU whose telephone number is (571)270-1250. The

examiner can normally be reached on 8:00-17:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JW
/Wei Y Zhen/

Supervisory Patent Examiner, Art Unit 2191